

Technical Synthesis of 2-Methyl-5-Ethyl Pyridine and 2-Methyl-5-Vinyl Pyridine,
and Their Fields of Application

SOV/153-58-5-16/28

best decreased by dilution with steam. Figure 2 shows typical dehydrogenation curves of MEP (catalyst K-12 at 5750). Under optimum conditions the MVP yields per passed MEP amounted to 20-25%, and per decomposed MEP to 70-75%. 3) Isolation and stabilization of MVP, i.e. the separation of MEP from MVP is a difficult process as their boiling points are close to each other (176.7 and 187°). Furthermore MVP is easily polymerized. For this reason a high vacuum is required. Sulfur, picric acid, α -nitroso- β -naphthol and sulfurous methyl amino phenol (Figs 3,4) were the best stabilizers of some dozens investigated. 4) Equipment and apparatus for the MVP synthesis. Figure 5 shows a corresponding scheme. 5) The scheme (p 98) shows some more syntheses proceeding from MEP (Refs 15,16). 6) Finally, rubber and latex types on MVP basis are discussed. Some of them show better adhesion to cord from viscose and nylon, high elasticity, frost resistance, and resistance to wear and tear. Some branches of industry announce at present a high demand for those rubber types. There are 5 figures and 18 references, 6 of which are Soviet.

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507/153-58-5-16/26

Technical Synthesis of 2-Methyl-5-Ethyl Pyridine and 2-Methyl-5-Vinyl Pyridine,
and Their Fields of Application

ASSOCIATION: Yaroslavskiy tekhnologicheskii institut i opytnyy zavod Ministerstva
khimicheskoy promyshlennosti (Yaroslavl' Technological
Institute and Test Plant of the Ministry of Chemical Industry)

SUBMITTED: December 28, 1957

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AUTHORS: Tsaylingol'd, V. L.; ~~Parfomov, D. I.~~ ^{SOV/138-86-9.1/11} Eshler, V. G.;
Lazaryants, E. G. and Beguslavskiy, D. A.

TITLE: Low-Temperature Copolymers of 1,3-Butadiene with 2-Methyl-
4-Vinylpyridine in Ordinary Rubbers (Preliminary Communi-
cation) (Nizkotemperaturnyye sopolimery butadiyena-1,3
s 2-metil-5-vinilpiridinom v kachestve kauchukov obshchego
naznacheniya)

PERIODICAL: Kauchuk i Rezina, 1958. Nr 9, pp 1 - 4 (USSR)

ABSTRACT: Latexes based on these copolymers show better properties
when used in the production of tyre cords (Ref.1)
During investigations of these copolymers, and of some
of their properties, the copolymers contained varying
amounts of monomers; the polymerisation temperatures were
50° and 5°C. Low temperature polymerisation conditions
were based on the oxidation-reduction system suggested
by Dolgoplosk (Ref.4). The substance for use during
polymerisation at 50°C was based on the composition given
for rubber SKS-30. A 70% conversion of the monomers
was attained after 10 - 12 hours. The untreated mono-
mers were distilled off after termination of the poly-
merisation and 2.5% of an aqueous dispersion of "Neczon
"D" introduced into the latex. The latex coagulated
and the rubber was dried to 105°C. The composition

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 Low-Temperature Copolymers of 1,3-Butadiene with 2-Methyl-4-Vinyl-
 pyridine in Ordinary Rubbers

of two mixtures is given. These mixtures were vulcanised at 145°C and tested according to GOST 8074-51 (Ref. 5). The physico-mechanical properties of rubbers obtained by hot and cold polymerisation are given in Tables 1 and 2. The characteristics of these copolymers and of styrene copolymers SKS-30 and SKS-30A were compared. The properties of both types of copolymers depend on the content of 2-methyl-5-vinylpyridine (Fig. 1). Fig. 2: the wear resistance of cold and hot copolymers when containing 10 - 15% 2-methyl-5-vinylpyridine. Data on the loss of plasticity during boiling in H₂O (at 100°C for 30 minutes) is given in Table 3. Copolymers of butadiene with 2-methyl-5-vinylpyridine show a 1.5 - 2-fold better wear resistance than butadiene-styrene rubber vulcanisates. There are 2 Figures, 3 Tables and

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SOV/138-58-9-1/11

Low-Temperature Copolymers of 1,3-Butadiene with 2-Methyl-5-Vinyl-
pyridine in Ordinary Rubbers

5 References: 3 English and 2 Soviet.

ASSOCIATION: Yaroslavskiy tekhnologicheskii institut i Yaroslavskiy
shinnyy zavod (Yaroslavl' Technical Institute and the
Yaroslavl' Tyre Factory)

Card 3/3

FARBEROV, M.I.; SPERANSKAYA, V.A.

Synthesis of β -chloro substituted alcohols and their conversions.
Zhur. ob. khim. 28 no. 8:2151-2162 Ag '58. (MIRA 11:10)

1. Yaroslavskiy tekhnologicheskii institut.
(Alcohols)

5(1)

AUTHOR: Farberov, Professor M. I.

SOV/64-59-1-5/24

TITLE: Prospects for the Development of the Chemical Industry
in Yaroslavl' (Perspektivy razvitiya khimicheskoy
promyshlennosti v Yaroslavle)

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 1, pp 19-24 (USSR)

ABSTRACT: This article is written in the form of a critical review.
The area of Yaroslavl' is an important center of the
chemical industry in the USSR. Among others there is the
Yaroslavskiy shinnyy zavod (Yaroslavl' Tire Factory). On the
other hand, the chemical plants are distant from their
raw-material sources, which shall be changed by the new
Seven-Year Plan by completing the building of the new
large Novo-Yaroslavskiy neftepererabatyvayushchiy zavod
(NPZ (Novo-Yaroslavskiy Petroleum Processing Works) and by
laying a pipeline for the supply of these works from
Al'met'yevsk (sulphurous petroleum). It is stated that the
disagreements of the former Ministerstva neftyanoy i
khimicheskoy promyshlennosti (Ministries of Petroleum and
Chemical Industries) have much impeded cooperation. Considerations

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Prospects for the Development of the Chemical Industry
in Yaroslavl

07/64-53-1-5/24

on concrete problems of petroleum chemistry are made with respect to Yaroslavl' Economic District (Yaroslavskiy ekonomicheskii rayon), and the following groups are described: petroleum gases, aromatic hydrocarbons and their primary processing. The production of monomers for the manufacture of synthetic types of rubber. Synthetic rubber (with a table on the production of divinyl from alcohol). The enamel products with special reference to the application of synthetic resins. The production of black which is to be increased by the building of a new factory as the rubber industry is in great demand of active types of black. The establishment of the NPZ is to bring about savings of 30 - 35 % for the building of chemical plants by the coordination of petroleum processing and the chemical industry. On the area of the "Svobodnyy trud" Works all plants for enamel production are to be erected. The building of the large petroleum-processing center will also require more intense scientific research work in Yaroslavl'. There is 1 table.

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Prospects for the Development of the Chemical Industry SOV/64-59-1-5/24
in Yaroslavl'

ASSOCIATION: Yaroslavskiy tekhnologicheskii institut i Institut
monomeroi dlya SK (Yaroslavl' Technological Institute
and Institute of Monomers for SK (Synthetic Rubber))

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15(9)

SOV/63-4-1-13/31

AUTHOR: Farberov, M.I., Professor

TITLE: The State and the Tasks of the Chemistry and Technology of Preparing Monomers for Synthetic Rubbers (Sostoyaniye i zadachi khimii i tekhnologii polucheniya monomerov dlya sinteticheskikh kauchukov)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 1, pp 90-96 (USSR)

ABSTRACT: The most important raw material for the production of synthetic rubbers is divinyl (butadiene). In the USSR it is produced by the Lebedev method. The yield is 71 - 72%. This method is economically inferior to the synthesis on the base of butane (Table 1). Butylene cannot be used for this purpose because it is needed in the USSR for the production of gasoline with high octane number. A two-stage synthesis of divinyl from n-butane has been developed in a pilot plant. The VNIISK developed a divinyl synthesis on the base of propylene and formaldehyde. The latter substance is produced by the oxidation of hydrocarbons. The intermediate product methyldioxane is an active solvent for varnishes. Isoprene can be polymerized catalytic-

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SOV/63-4-1-13/31

The State and the Tasks of the Chemistry and Technology of Preparing Monomers for Synthetic Rubbers

ally in the presence of lithium to polyisoprene rubber which is similar to natural rubber. Isoprene is prepared from isobutylene and formaldehyde in the presence of 1 - 1.5% sulfuric acid. The intermediate products, like 4,4-dimethyldioxane are decomposed to isoprene. Another method is the dehydrogenation of isopentane to isoamylenes and these to isoprene. In the Institute of Organic Chemistry of the USSR Academy of Sciences I.N. Nazarov improved A.Ya. Favorskiy's isoprene synthesis on the base of acetylene and acetone. Chloroprene is produced by the classical method of the dimerization of acetylene to vinyl-acetylene with following hydrochlorination. Klebanskiy developed a new variant of this method. Isobutylene for butyl-rubber is obtained by the dehydrogenation of isobutane. Styrene for rubbers and styrene-butadiene resins is prepared by the dehydrogenation of ethyl-benzene. The monomer α -methylstyrene is used only in the USSR in order to save ethylene. P.G. Sergeyev developed a method of oxidizing isopropylbenzene with following decomposition of the hydroperoxide. Another method is the dehydrogenation of isopropylbenzene. Vinyl-toluene is produced from ethylene and toluene with following

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SOV/63 4-1-13/31

The State and the Tasks of the Chemistry and Technology of Preparing Monomers for Synthetic Rubbers

dehydrogenation of the mixture of ethyltoluene isomers. The Chichibabin reaction is the method for obtaining 2-methyl-5-ethylpyridine by the interaction of acetaldehyde and ammonia. The yield is 70%. Rubbers made of the nitrile of acrylic acid and divinyl have good mechanical properties and are oil-resistant. Acryl derivatives are also the base for synthetic fibers and plastics. Their production is not considered here. Thiocols are produced by the polycondensation of the polysulfides of alkali metals using organic dichloro-derivatives. The heat-resistant polysiloxane rubber is obtained from dimethyldichlorosilane which is produced by the interaction of methylchloride and silicon with copper as a catalyst. Fluorine-containing rubbers are resistant to aggressive media. The best known type is the copolymer of vinylidene fluoride with trifluorochloroethylene. These polymers are not available in the USSR in the necessary quantities. Polyurethane rubbers have the highest wear-resistance. They are produced by the condensation of glycol with dicarbonic acid and lengthening of the molecular chain by the interaction of diisocyanates and hydroxyl groups.

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The State and the Tasks of the Chemistry and Technology of Preparing Monomers
for Synthetic Rubbers

There are 2 tables and 31 references, 19 of which are Soviet,
11 English, and 1 Belgian.

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SOV/138-59-3-2/16

AUTHORS: Tsaylingol'd, V.L., Farberov, M.I., Epshteyn, V.G.,
Uzina, R.V., Peyzner, A.B., Boguslavskiy, D.B., Bugrova,
G.A., Basin, V. Ye. and Shmurak, I.L.

TITLE: Preparation of latexes Obtained by the Copolymerisation
of Butadiene and 2-Methyl-5-Vinylpyridine, and Their Use
for Impregnating Tyre Cords (Polucheniye lateksov
• sopolimerizatsiyey butadiyena s 2-metil-5-vinilpiridinom
i primeneniye ikh dlya propitki shinnogo korda)

PERIODICAL: Kauchuk i rezina, 1959, Nr 3, pp 6 - 9 (USSR)

ABSTRACT: The addition of copolymers of butadiene and 2-methyl-5-
vinylpyridine, and also of tripolymers consisting of
butadiene-styrene, and 2-methyl-5-vinylpyridine, increases
the bond strength between the rubber and the cord by 80
to 100% (Ref 5 - 8). The copolymerisation of butadiene
and 2-methyl-5-vinylpyridine was investigated and the
obtained latexes were evaluated as impregnating agents.
The two compounds were copolymerised at 5° and 50° C. In
both tests salts of synthetic fatty acids were used as
emulsifiers and "Leukanol" was added as stabiliser.
Potassium persulphate was used as polymerisation initiator
and 0.01 to 0.005 weight/volume of Trilon B when the

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Preparation of Latexes Obtained by the Copolymerisation of Butadiene and 2-Methyl-5-Vinylpyridine, and Their Use for Impregnating Tyre Cords

process was carried out at 50°C (isopropylbenzene hydroperoxide was used when the copolymerisation proceeded at 50°C). Furthermore, 0.001% methyl-p-aminophenol was added as polymerisation inhibitor. Results in Table 1 indicate that the addition of the inhibitor does not affect the rate of copolymerisation. The reaction was allowed to proceed (at both process temperatures) until a 75 to 80% conversion was reached after 8 to 12 hours (Figure 1). The unreacted monomers were separated from the latex by vacuum distillation and 2% of Neozene D added to the prepared latex. The effect of the addition of Diproxid (diisopropyl xanthogen disulphide) on the hardness of the copolymer was tested (Figure 2). Both types of the latex showed good mechanical properties. The latex was Card 2/4 further used for impregnating viscose and polyamide cords

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Preparation of Latexes Obtained by the Copolymerisation of Butadiene and 2-Methyl-5-Vinylpyridine, and Their Use for Impregnating Tyre Cords

in conjunction with rubbers based on natural, butadiene (SKB) and with butadiene-styrene (SKS-30AM) rubbers. The quantity of 2-methyl-5-vinylpyridine contained in the latex affects the bond strength between the viscose cord and the rubbers (Figure 3). Optimum strength of the bond is achieved when resorcinol formaldehyde resins are added to the copolymer (Figure 4). Improved physical and mechanical properties of the adhesive films result when 10% by weight of 2-methyl-5-vinylpyridine are added (Table 2). The effect of various quantities of resorcinol-formaldehyde resins on the strength of bonding between the cord and the rubber was investigated (Figures 5a, b and c). Changes in the plasticity of the polymer affect the physical and mechanical properties of the adhesive film and the bonding between the cord and the rubbers. Results of relevant experiments are shown in Figure 6. The physical and mechanical properties of the adhesive are improved and the strength of bonding is increased when lowering the polymerisation temperature (Table 3).

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Preparation of Latexes Obtained by the Copolymerisation of Butadiene and 2-Methyl-5-Vinylpyridine, and Their Use for Impregnating Tyre Cords

Table 4 gives the data on the strength of bonding of the viscose cord with various tyre rubbers. The strength of bonding was particularly satisfactory when natural rubber was used and when the latexes were polymerised at 50°C.

There are 7 figures, 4 tables and 10 references of which 8 are English and 2 Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut monomerov dlya SK; Nauchno-issledovatel'skiy institut shinnoy promyshlennosti; Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka; Yaroslavskiy shinnyy zavod (Research Institute for Monomers for the use in Synthetic Rubber; Research Institute for the Tyre Industry; All-Union Research Institute for Synthetic Rubber; Yaroslavl' Tyre Factory)

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TSAYLINGOL'D, V.L.; FARBEROV, M.I.; BUGROVA, G.A.

Copolymerisation of 1,3-butadiene and 2-methyl-5-vinylpyridine.
Part 1: Copolymerisation constants and composition of copolymers.
Vysokom. soed. 1 no.3:415-419 Mr '59. (MIRA 12:10)

1. Tekhnologicheskii institut, Yaroslavl'.
(Polymerisation) (Butadiene) (Pyridine)

TEPENITSYNA, Ye.P.; FARBEROV, M.I.; KUT'IN, A.M.; LEVSKAYA, G.S.

Some investigations of ethylene polymerization in the
presence of complex organometallic catalysts. Vysokom.sped.
1 no.8:1148-1158 Ag '59. (MIRA 13:2)

1. Yaroslavskiy tekhnologicheskiy institut.
(Ethylene) (Polymerisation) (Catalysts)

S/081/60/000/013(I)/004/014
A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 13(I), p. 193,
51959

AUTHORS: Belorossova, A. G., Farberov, M. I.

TITLE: Synthesis of Alkyl-Cresoldisulfides - Agents of Rubber Reclaiming

PERIODICAL: Uch. zap. Yaroslavsk. tekhnol. in-ta, 1959, Vol. 3, pp. 77-82

TEXT: During the research of active destructive agents suitable for rubber reclaiming tri-butylcresoldisulfide was synthesized (in the form of a mixture of isomers) (I). To the mixture of cresols ("Tricresol") (boiling temperature 90 - 107°C/20 mm, d 1.034, m-cresol content 32.5%) (II) 5% H₂SO₄ (d 1.84) is added and isobutylene (III) is passed at 60°C. The reaction product is washed with water, boiled with a small quantity of 10% alkali, washed with water and dried. At a mole ratio II:III = 1:1, mono-tert-butylcresols are formed (27.8% mono-alkyl-derivatives of meta-cresol and 51.3% mono-alkyl-derivatives of o- and p-cresols are determined by vacuum distillation). At a ratio II:III = 1:2, a considerable amount of di-tert-butylcresols is obtained. A quantity of 0.5 mole S₂Cl₂ is added at 80°C to the dried mono-alkylation reaction product (1 mole calculated

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S/081/60/000/013(I)/004/014
A006/A001

Synthesis of Alkyl-Cresoldisulfides - Agents of Rubber Reclaiming

for mono-alkyl derivatives). The solvent is eliminated in a vacuum. I is obtained in the form of thick, viscous, sticky resin. I is an active destructive agent for rubber made of natural caoutchouc.

V. Skorodumov

Translator's note: This is the full translation of the original Russian abstract.



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S/081/60/000/007/005/012
A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 7, p. 189, # 26523

AUTHORS: Kryukov, S. I., Farberov, M. I.

TITLE: Methylpentadiene Synthesis on Propylene Base

PERIODICAL: Uch. zap. Yaroslavsk. tekhnol. in-ta, 1959, No. 3, pp. 21-33

TEXT: 2-methylpentene-1 (I) is easily obtained by dimerization of propylene according to Tsigler; it is dehydrated into methylpentadiene (II) in the presence of a K-16 catalyzer (prepared on the base of metal oxides and additionally heated for 1.5 hours at 830°C). Under optimum conditions (500°C volumetric rate 0.6 l per 1 l of the catalyzer per 1 hour; molar dilution by vapor 1 : 12) the following substances and the yield percentage per decomposed I, were obtained: II, 71.8; isoprene, 3.4; isobutylene, 6.4; propylene, 2.3; higher hydrocarbons, 2.6. Changes in the temperature conditions of the reaction reduced sharply the yield of II. K₁₂ and K₁₈ catalyzers yielded less satisfactory results; changes in the volumetric rate had only a slight effect on the

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Methylpentadiene Synthesis on Propylene Base

S/081/60/000/007/005/012
A006/001

yield of II; a greater effect was exerted by changes in the amount of diluent vapor. Thermodynamical calculations of the reaction are given.

L. Shchukina ✓

Translator's note: This is the full translation of the original Russian abstract.

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PHASE 1 BOOK EXPLOITATION NOV/9350

Совещание по химии, технологии и применению производных пирдина и кхинолина. Москва, 1957

Enaliny, khimologiya i prikladnyye proizvodnyye pyridiny i khinoliny: materialy soveshchaniya (Charal'ty, Technology and Utilization of Pyridine and Quinoline Derivatives; Materials of the Conference) Nts. Izd-vo AN Latvyskoy SSR, 1960. 299 p. Errata slip inserted. 1,000 copies printed.

Sponsoring Agencies: Akademija nauk Latvijasokj SSR. Institut klmali; Viesoyuznoye klmalcheskoye obshchestvo.

Ed.: S. Bazarova; Tech. Ed.: A. Kiyavina; Editorial Board: Yu. A. Pankovskiy, Candidate of Chem. Sci. F.

Varnaga, Candidate of Chemistry (Resp. Ed.), Z. P. Zaluzhnyev, Doctor of Chemistry, and M. M. Kalinyn'.

PURPOSE: This book is intended for organic chemists and chemical engineers.

COVERAGE: The collection contains 33 articles on methods of synthesizing or producing pyridine, quinoline, and their derivatives from natural sources. No personal classes are mentioned. Figures, tables, and references accompany the articles.

II. SYNTHETIC MEANS OF PREPARING PYRIDINES AND QUINOLINES

Salykov, A. S., and O. S. Otchobchenko (Sverdlovsk State
Economic University named after N. I. Zhukov (Central
Asia State University named V. I. Lenin)). Synthetic Stresses
Card 6/10

Pribludnyy, M. J., B. P. Tsyavshchikov, A. M. Kut'ko,
 Z. V. Yermola, and Ye. V. Yanich. Yanich, Evskiy, Ivanovskiy
 and Yermola. *Trudy Natsionalnogo khimicheskogo*

premyslennosti (Vsesoyuznyy Tekhnologicheskyy Institut)

Experimental Plant of the Ministry of the Chemical Industry]] Technical Syntheses of 2-Methyl-5-octyl-pyrid

En: 2-Methoxy-5-vinylpyridine and Its Derivatives

YANG, Q. YA. [Institut organicheskogo sinteza Akademii
Nauk SSSR (Institute for Organic Synthesis of the
USSR Academy of Sciences)]

Latvian Academy of Sciences (Latvian SSR). The Transition

FROM 1,3-DIBROMONE TO 2,3-DIBROMONE

Kotelnik, N. N. (Institute of High Molecular Compounds,
USSR Academy of Sciences)

of the Academy of Sciences USSR)], Synthesis and Polymerization of Saturated Compounds of the Pyridine and Quin-

Line Series

Andriyev, B. T. (Moskovskiy gosudarstvennyy universitet [Moscow State University]). Industrial synthesis of lepid-

Page 1

Ex: 204, H. 5. (Formerly set 'skokhoyay'svanyy' institution
for cultural) Institute in Sakalinsk. Synthesis of

quindoline Bases from Aromatic Amines and Acetylene

Blankin, V. I. [Rostov State University] Preparation of

Guineldines from Sodium Acyl Allides in syntheses of
N-Arylguineldine Salts

mechanism of the [Vysotskiy nauchno-issledovatel'skiy]

INSTITUT KHIMICHESKIKH REAKTSIV (All-Union Scientific Institute for Chemical Reactions) | Source of the

Hydroxyquinoline Method of Synthesizing quinoline Base

Tertov, B. A. [Rostov State University] Synthesis of

~~DERIVATIVES of quinolins and some N-allylpyridines~~ of Aryl Alkynes

Kozlov, N. S. and O. K. Koz'minovskiy (Perm'skiy gosudarstvennyi universitet)

perforichemsky Institut (Perm State Pedagogical Institute) for the Synthesis of 2-Phenyl-5,6-benzocoumarins

SECRET

Ardashev, V. I. [Moscow State University]. Catalytic Co-

-VECTION OF NOXYLATED AYL AMINES TO QUILICOLINES

Salukayev, L. P. Products of the condensation of aniline with N-alkyl derivatives in a neutral medium.

五

PROKOF'YEV, Ya.N.; FARBBEROV, M.I.; SHADRICHEVA, V.A.

α -Methylstyrene - butadiene copolymers with a predominant vinyl monomer content. Vysokom. soed. 2 no.2:185-192 P '60.

(MIRA 13:11)

1. Yaroslavskiy tekhnologicheskii institut.

(Polymerization)

(Styrene)

(Butadiene)

5.3400

78274
SOV/79-30-3-28/69

AUTHORS: Farberov, M. I., Kut'in, A. M., Kishinskiy, G. I.,
Vernova, ~~Il'yan, Il'yanov~~

TITLE: Synthesis of Dienes From Olefins and Aldehydes. I.
Synthesis of Isoprene From Isobutylene and Formaldehyde

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 3, pp
875-884 (USSR)

ABSTRACT: Among many catalysts tested, the best results were
obtained with KSD catalyst (a mixture of calcium
phosphates of a definite composition). The catalyst
needs regeneration after 2-4 hours of work, and this
can be best done with a steam-air mixture which
removes deposited "coke" from it. The activity of
the catalyst decreases sharply when the reaction is
carried out without steam. The dependence of the
rate of dimethyldioxane conversion on contact time
and temperature is shown in Figs. 2 and 3.

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Synthesis of Dienes From Olefins and Aldehydes. I.

78274

SOV/79-10-3-23/05

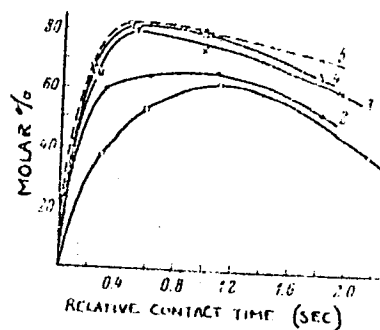


Fig. 2. Conversion of dimethyldioxane (I) into unsaturated hydrocarbons (C_5H_8 and $iso-C_4H_8$) at different temperatures and with steam dilution, 1:14 (molar): (1) 300° ; (2) 325° ; (3) 350° ; (4) 375° ; (5) 400° .

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Synthesis of Dienes From Olefins and Aldehydes.
I.

7/27/69

SOV/79-30-3-28/69

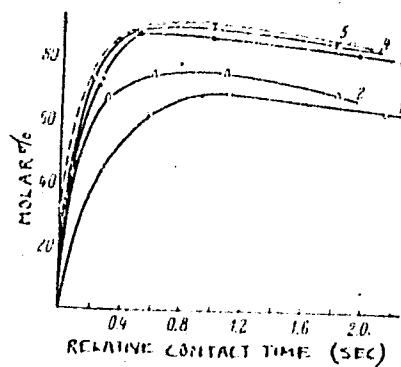


Fig. 3. Yield of isoprene based on reacted dimethyldioxane (I) at different temperatures with steam dilution, 1:14 (moles): (1) 300°; (2) 325°; (3) 350°; (4) 375°; (5) 400°.

Card 3/6

Synthesis of Dienes From Olefins and Aldehydes.

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I.

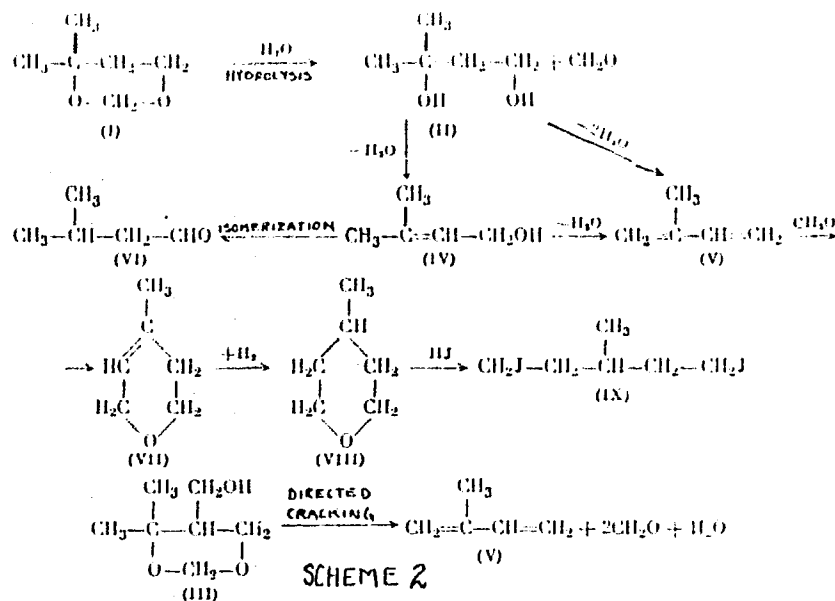
SOV/79-30-3-28/69

Dilution of dimethyldioxane with steam significantly increases the reaction rate. An appropriate selection of the reaction conditions could yield 75-78% isoprene, based on reacted dimethyldioxane, or 80-85% isoprene, based on decomposed dimethyldioxane. Among the reaction products of isobutylene with formaldehyde, in addition to the main product, dimethyldioxane (I), diol (7-10% based on unreacted formaldehyde), and cyclic alcohol (III, 7-8%) are present. They can also be converted into isoprene over the KSD catalyst. The mechanism of reaction is shown in Scheme 2.

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Synthesis of Dienes From Olefins and Aldehydes.
I.

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SOV/79-36-3-28/69



Card 5/6

Synthesis of Dienes From Olefins and Aldehydes.
I.

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SOV/79-30-3-28/69

The physical constants of the basic and side products of the reaction are: isoprene (V), bp 34° , n_D^{20} 1.4219; 2-methylbuten-2-ol-4 (IV), bp $139-140^{\circ}$; isovaleric aldehyde (VI), mp $117.5-118^{\circ}$; compound (VII), bp $118.5-119^{\circ}$, n_D^{20} 1.4490; compound (VIII), bp $105-107^{\circ}$, n_D^{20} 1.4190; compound (IX), bp $120-121^{\circ}$ (4 mm), n_D^{20} 1.5870. N. K. Shemyakina participated in this work. There are 4 figures; 3 tables; and 10 references, 8 Soviet, 2 U.S. The U.S. references are: Gresham, T. L., Steadman, J. Am. Chem. Soc., 71, 878 (1949); U.S. Patent 2218640.

ASSOCIATION: Scientific Research Institute of Monomers for Synthetic Rubber, and Yaroslavl Technological Institute (Nauchno-Issledovatel'skiy institut monomerov dlya SK i Yaroslavskiy tekhnologicheskiy institut)

SUBMITTED: March 7, 1958
Card 6/6

S/079/60/030/04/09/080
B001/B016

AUTHORS: Farberov, M. I., Kut'in, A. M., Kishinskiy, G. I.,
Vernova, T. P.

TITLE: Diene Synthesis on the Basis of Olefins and Aldehydes.
II. Synthesis of Divinyl on the Basis of Propylene and
Formaldehyde ✓

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 4, pp. 1099-1106

TEXT: Some patents in publications indicate the possibility of obtaining divinyl from 4-methyl dioxane (Ref. 5) but without an experimental basis. The authors of the present paper thoroughly investigated the contact conversion of methyl dioxane (I) (obtained from propylene and formaldehyde) in the gaseous phase by means of various catalysts (mainly metallic phosphates) in which connection divinyl is formed in high yield. It was further shown that under certain conditions divinyl and allyl carbinol (IV), approximately in the same quantity (Ref. 6), may be obtained at the same time. On the basis of previous papers (Refs. 1-4) (Scheme 1) the synthesis of divinyl ✓

Card 1/3

Diene Synthesis on the Basis of Olefins and Aldehydes. II. Synthesis of Divinyl on the Basis of Propylene and Formaldehyde

S/079/60/030/04/09/060
B001/B016

was carried out by allowing propylene to react with formaldehyde by means of a catalyst. As a result of the investigation of the contact conversion of the principal reaction product, methyl dioxane (Scheme), an 82% divinyl yield was obtained (calculated for the methyl dioxane having passed reaction). By a suitably conducted hydrogenation of the allyl carbinol (IV), butanol-1 was obtained quantitatively. At the same time, divinyl and allyl carbinol could be synthesized in about the same quantities. The authors investigated the contact conversion of the by-product of the above-mentioned reaction, 4-hydroxy-tetrahydropyran (III), by means of the KSD catalyst, in which connection compound (VIII) (36%), divinyl (15-20%), and the unsaturated alcohol (IV) resulted. The divinyl yield could be increased up to about 70% at a higher temperature (550°). A reaction mechanism was suggested for the formation of the products which are formed on contact conversion of methyl dioxane and 4-hydroxy-tetrahydropyran. 3 diagrams and 3 tables illustrate the investigation results. There are 3 figures, 3 tables, and 13 references, 11 of which are Soviet.

Card 2/3

Diene Synthesis on the Basis of Olefins and
Aldehydes. II. Synthesis of Divinyl on the
Basis of Propylene and Formaldehyde

S/079/60/030/04/09/080
B001/B016

ASSOCIATION: Nauchno-issledovatel'skiy institut monomerov dlya SK
(Scientific Research Institute of Monomers of Synthetic
Rubber). Yaroslavskiy tekhnologicheskii institut
(Yaroslavl' Institute of Technology) ✓

SUBMITTED: April 7, 1958

Card 3/3

15 8050

24820

S/081/61/000/011/016/040
B105/B203

AUTHORS:

Bondarenko, A. V., Karakuleva, G. I., Kut'in, A. M.,
Farberov, M. I.

TITLE:

Synthesis of vinyl xylenes on the basis of xylenes and
ethylene

PERIODICAL:

Referativnyy zhurnal. Khimiya, no. 11, 1961, 190. abstract
11491 (Uch. zap. Yaroslavsk. tekhnolog. in-ta, 1960. 5.
79-89)

TEXT: In the alkylation of m-xylene (I) by means of ethylene (molar ratio
2 : 1), the minimum yield (~1% by weight of the resulting alkylate) in
products of disproportionation (PD) with the boiling point 145-180°C
[CH₃C₆H₄C₂H₅, (CH₃)₃C₆H₃] was obtained at 80-85°C and with 2% AlCl₃, while
the yield in ethyl xylene (II) was ~30%, or 95-97% of the reacted (I).
respectively. The polyproducts are smoothly dealkylated to (II) under the
conditions of the main reaction. The effect of temperature and AlCl₃
concentration on the PD yield was studied. Vinyl xylene (yield 20-25%
Card 1/2

21820

S/081/61/000/011/016/040
B*05/B203

Synthesis of vinyl xylenes on the ...

referred to the passed-through, or 70-75% to the decomposed (II) is obtained by dehydrogenation of (II) on the catalyst K-10 (K₂O) (87.6% ZnO, 10.95% Cr₂O₃, 0.56% SiO₂, 0.45% Al₂O₃, 0.44% K₂O) at 600°C. and dilution by water vapor in a molar ratio of 1 : 12 during a contact time of 0.35-0.4 sec. The effect of temperature, contact time, and character of the catalyst on the dehydrogenation process of (II) was studied. [Abstracter's note: Complete translation.]

Card 2/2

BONDARENKO, A.V.; KUT'IL', A.I.; USTAVSHCHIKOVA, Z.F.; FARBEROV, M.I.

Synthesis of tert-butylbenzoic acid. Izv.vys.ucheb.zav.;
Khim.i Khim.tekh. 4 no.3:482-485 '61. (MIRA 14:10)

1. Yaroslavskiy tekhnologicheskii institut i nauchno-issledovatel'skiy institut sinteza monomerov dlya sinteticheskogo kauchuka, kafedra tekhnologii osnovnogo organicheskogo sinteza i sinteticheskogo kauchuka.

(Benzoic acid)

S/O80/61/034/003/011/017
A057/A129

AUTHORS: Farberov, M. I.; Kut'in, A. M., Ustavshchikov, B. F., Vernova,
T. P., Frolov, A. P.

TITLE: Investigation of the conditions for the synthesis of 2-methyl-
-5-vinylpyridine

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 3, 1961, 632 - 640

TEXT: Dehydrogenation of 2-methyl-5-ethylpyridine (MEP) was investigated in order to increase the yield of 2-methyl-5-vinylpyridine (MVP). Conditions were presented ensuring a 25 % yield of MVP in relation to the amount passed of MEP and 70 - 73 % yield in relation to decomposed MEP. Steam effects partial hydrolysis of pyridine bases and is thus not a completely inert diluent in dehydrogenation of MEP. Inhibitors for polymerization were investigated for the storage of MVP and separation from dehydrogenation products. Improvement of this dehydrogenation process is important for the manufacture of polymer materials. MVP is especially significant in the production of special types of synthesized latex and synthetic rubber according to R. Frank et al. (Ref. 1: Ind. Eng. Chem., 40, 879 (1948)), J. E. Pritchard and M. H. Opheim (Ref. 2: Ind. Eng. Chem., 46, 2242, Card 1/9

S/080/61/034/003/011/017
A057/A129

Investigation of the conditions for

1954, 47, 863, 1955), H. E. Rallsback and C. C. Biard (Ref. 3: Ind. Eng. Chem., 48, 1043, 1956), and V. L. Tsaylingol'd et al. (Ref. 4: Kauchuk i rezina, 9, 1958, 3, 1959, 9, 1959), or ion exchange resins in the manufacture of synthetic fibers. The raw material - MEP - is synthesized by Chichibabin's reaction between paraaldehyde and ammonia in liquid phase according to M. I. Faberov et al. (Ref. 5: Izv. Vuzov, Khim. i khim. tekhn., 5, 92, 1958) with a 70 - 73 % yield. The present experiments were carried out (in assistance of M. Yu. Tikhvinskaya and M. A. Loginova) by a method and with a laboratory assembly described in a prior paper (Ref. 11: ZhOKh, 30, 875, 1960). Vapor pressure and liquid - vapor equilibria in the system MEP - MVP was determined on an apparatus similar to Othmer's (Ref. 12: Ind. Eng. Chem., 45, 614, 1953) especially adapted for vacuum tests. Two catalysts were used: no. 1 based on ZnO and no. 2 on Fe₂O₃, containing 86 - 88 % of the basic component, some chromium oxide and small amounts of other components, which are not specified. Since considerable carbon deposition occurs during the dehydrogenation process, the catalyst had to be regenerated after 2 - 8 hours by passing an air-steam mixture at a maximum temperature of 650° - 700°C. Results of dehydrogenation experiments with steam as diluent in varying conditions are given in Table 1, It can be seen that the yield of MVP related to decomposition of MEP decreases with the contact time. This is apparently effected by

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Investigation of the conditions for

S/080/61/034/003/011/017
A057/A129

side reactions and increasing carbon deposition. The latter depends on the type of catalyst and the degree of dilution by steam. Steam cannot be considered as inert diluent, since with increasing dilution by steam the yield of catalyzate and of MVP (based on decomposed MEP) decreases, in spite of the fact that the yield of MVP based on the amount of passed MEP increases (Figure 1). Also with increasing dilution by steam formation of gaseous products (CO_2 , H_2 , NH_3 etc) and the content of pyridines (α - and γ -picoline, 2,5-lutidine, 3-vinylpyridine) in the catalyzate increases. This can be explained by the reaction of pyridine bases with steam, resulting in a partial dealkylation of MEP and formation of pyridines, or total rupture of the pyridine ring with ammonia evolution. A similar reaction was observed by A. A. Baladin et al. (Ref. 8: DAN SSSR, 110, 79, 1956) on α -picoline. These side reactions of hydrolysis occur with different rates on various catalysts, thus influencing the selection of the latter. Results on dehydrogenation of MVP with other diluents are given in Table 3. The observed effect of benzene can be explained by the fact that no side reactions of hydrolysis occur. Although nitrogen does not show these side reactions, no desorption of pyridine bases from the catalyst is effected by nitrogen (contrary to benzene) resulting in thermal decomposition of these substances. Fractionation of the catalyzate at 20 torr demonstrated that the fraction boiling at 63 -

Card 3/9

S/080/61/034/003/011/017

A057/A129

Investigation of the conditions for

- 69°C (20 torr) [Abstracter's note: Error in original paper - 200 torr instead of 20.] has an increased refraction index and contains considerable amounts of an unsaturated compound, apparently 3-vinylpyridine. Thus the following reaction and side products were obtained in dehydrogenation of MEP: (I) α -picoline, (II) 3-ethylpyridine, (III), 2,5-lutidine, (IV) 3-vinylpyridine, (V) 2-methyl-5-ethylpyridine, (VI) 2-methyl-5-vinylpyridine. The present authors consider (I), (II) and (III) as main cracking products of MEP (in presence of hydrogen), while (IV) is a cracking product of MVP. Different stabilizers for MVP were investigated (Figure 3) and it was observed that 0.1 % of sulfur is the optimum stabilizer in fractionation of MVP. For the storage of MVP an admixture of 0.001 % methol is most efficient in stabilizing MVP for several weeks, or 0.01 % methol for several months. Liquid-vapor equilibrium in the system MEP - MVP is shown in Figure 5. Corresponding experiments demonstrated that special conditions must be maintained if a 98 - 99 % concentration of MVP should be attained in fractionation. Thus in the system the maximum temperature should be 95°C (for highly concentrated MVP only 85°C), and highly effective inhibitors should be used. There are 6 figures, 4 tables and 12 references: 8 Soviet-bloc and 4 non-Soviet-bloc.

Card 4/9

Investigation of the conditions for

S/080/61/034/003/011/017

A057/A129

ASSOCIATIONS: Institut monomeroi dlya SK (Institute of Monomers for Synthetic Rubber) and Yaroslavskiy tekhnologicheskii institut (Yaroslavl' Technological Institute)

SUBMITTED: June 6, 1960.

Table 1: Dehydrogenation of MVP on the catalysts no. 1 and no. 2 using steam as diluent. Legend: (1) no. of the catalyst, (2) temperature(°C), (3) nominal contact time, sec., (4) volume velocity of the MEP supply (in ml/ml catalyst per h), (5) molar ratio H₂O/ MEP, (6) yield of the catalyzate (weight %), (7) yield of MVP based on the MEP passed (mole %), (8) yield of MVP based on the MEP decomposed (mole %), (9) carbon deposit on the catalyst (mole %, based on the MEP passed).

Card 5/9

ACCESSION NR: AT4029922

S/3087/62/001/000/0079/0089

AUTHOR: Ustavshchikov, B. P.; Farbarov, M. I.; Podgornova, V. A.

TITLE: Technical synthesis of methacrylic acid based on isobutylene

SOURCE: Yaroslavl'. Tekhnologicheskii institut. Khimiya i khimicheskaya tekhnologiya, vol. 1 (8), 1962, 79-89

TOPIC TAGS: methacrylic acid, isobutylene, synthesis, monomer, nitrogen tetroxide, nitrosation, isobutyric acid

ABSTRACT: Methacrylic acid and its derivatives are one of the most important monomers for the production of synthetic materials. The requirements for methacrylic derivatives, in the Soviet Union alone, will increase ten fold within the next 20 years. Currently there is one method of obtaining methacrylic acid and methyl methacrylate based on the use of acetone and hydrogen cyanide as an initial raw material. The authors conducted a detailed study of the method for obtaining methacrylic acid from isobutylene and nitrogen tetroxide. The reaction was shown graphically along with the various effects of temperature and velocity on the yield. Diagrams of the equipment used were given. The conditions of the isobutylene reaction with nitrogen tetroxide produced α -oxybutyric acid with a 75-80% yield as a

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ACCESSION NR: AT4029922

basic product. A nitrosation reaction occurred rather than a nitration reaction. The fundamental intermediate product of the reaction, α -nitrate isobutyric acid was formed from the isonitroso compound-oxime of α -nitrate isobutyric aldehyde. The catalyst and conditions were selected which permitted methacrylic acid to be obtained from α -oxyisobutyric acid with a yield approximating the quantitative. Orig. art. has: 6 figures.

ASSOCIATION: Yaroslavskiy tekhnologicheskii institut i nauchno-issledovatel'skiy institut monomerov dlya SK (NIIMK) (Yaroslavl technological institute and scientific research institute of monomers for SK (NIIMK)).

SUBMITTED: 00

DATE ACQ: 29Apr64

ENCL: 00

SUB CODE: CH

NO REF SOV: 006

OTHER: 006

Card 2/2

ACCESSION NR: AT4029923

8/3087/62/001/000/0091/0099

AUTHOR: Bondarenko, A. V.; Farberov, M. I.; Karakuleva, G. I.; Komolova, G. A.;
Tikhvinskaya, M. Yu.

TITLE: Synthesis of di-tert-butylbenzoic acid

SOURCE: Yaroslavl'. Tekhnologicheskii institut. Khimiya i khimicheskaya
tekhnologiya, vol. 1 (8), 1962, 91-99

TOPIC TAGS: benzoic acid, isobutylene, toluene, polymerisation, emulsifier, sur-
face active substance, alkali metal

ABSTRACT: Di-tert-butylbenzoic acid is a product which previously has not been
produced and has not been used on industrial scales. Only short references have
been made to the possibility of its synthesis. The authors suggest that the manu-
facture of di-tert-butylbenzoic acid is feasible from inexpensive raw material;
toluene and isobutylene. This was done in three stages. It was shown that a con-
venient method of obtaining di-tert-butyltoluene is the disproportioning of tert-
butyltoluene in the presence of aluminum chloride in the continuous extraction of
toluene (in order to shift the equilibrium of the reaction). Such a method assures
a yield of the object product on the order of 90% for the converted tert-butyltoluene
from the theoretic. By means of the liquid phase of oxidation di-tert-butyltoluene
Card 1/2

ACCESSION NR: AT4029923

in the presence of a catalyst it was possible to obtain a high-yield of di-tert-butylbenzoic acid. Di-tert-butyltoluene and di-tert-benzoic acid were separated and characterized. The salts of alkali metals of di-tert-benzoic acid were good emulsifiers in the processes of emulsion polymerization. Orig. art. has: 2 figures and 5 tables.

ASSOCIATION: Yaroslavskiy tekhnologicheskii institut i nauchno-issledovatel'skiy institut monomerov dlya SK (NIDSK) (Yaroslavl technological institute and scientific research institute of monomers for SK (NIDSK))

SUBMITTED: 00

DATE ACQ: 29Apr64

ENCL: 00

SUB CODE: CH

NO REF SOV: 003

OTHER: 002

Card 2/2

MIRONOV, G.S.; FARBEROV, M.I.; KORSHUNOV, M.A.

Synthesis of aldehydes of the acrolein series based on the
Mannich reaction. Khim. i khim. tekhn. 1:33-48 '62.

(MIRA 17:2)

1. Yaroslavskiy tekhnologicheskii institut i institut monomerov
dlya sinteticheskogo kauchuka.

TEPENITSYNA, Ye.P.; FARBEROV, M.I.; DOROGOVA, N.K.

Investigating the reaction of selective oligomerization of
bivinyll to cyclododecatrien. Khim. i khim. tekhn. 1:49-60 '62.
(MIRA 17:2)

MANTYUKOV, G.D.; FARBEROV, M.I.; VETROVA, V.V.

Oxidation of propylene dimers. Khim. i khim. tekhn. 1:61-77 '62.
(MIRA 17:2)

BONDARENKO, A.V.; DOLINKINA, V.I.; KUT'IN, A.M.; FARBEROV, M.I.

Synthesis of vinylxylol based on xylene and acetaldehyde.

Khim. i khim. tekhn. 1:101-107 '62.

(MIRA 17:2)

1. Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka i Yaroslavskiy tekhnologicheskoy institut.

S/204/62/002/004/014/019
E075/E435

AUTHORS: Bondarenko, A.V., Dolinkina, V.P., Kut'in, A.I.
Farberov, M.I.

TITLE: Synthesis of vinylxylene from xylene and acetaldehyde

PERIODICAL: Neftekhimiya, v.2, no.4, 1962, 585-591

TEXT: The synthesis was carried out in two stages: stage 1 - condensation of xylene and acetaldehyde to produce dixylylethane, stage 2 - catalytic cracking of dixylylethane with the formation of vinylxylene and ethylxylene. The first reaction was conducted with 92 to 96% H₂SO₄ as catalyst, the molar ratio of the acid to acetaldehyde and xylene being 1:0.25:1. Technical xylene as well as individual isomers could be used in this reaction. An increase of the molar ratio of acetaldehyde to xylene above 0.25:1 lowered the yield of dixylylethane. The reaction temperature had no effect on the yield between -14 to +10°C, however, at 20°C the yield decreased markedly. Under the optimum conditions the yield reached about 36% of the xylene taken and 82% of the reacted xylene. The second reaction was conducted in the presence of a clay (kaolin) activated by heating in air at 550 to 570°C. The yield of vinylxylene increased with

Card 1/2

Synthesis of vinylxylene...

S/204/62/002/004/014/019
E075/E435

temperature up to 600°C and reaction time (the time of contact up to 0.2 sec). The yield of ethylxylene increased at the same time. Dilution of dixylylethane with steam, or working under a vacuum, increased the yield of vinylxylene and improved its quality. The optimum condition for the reaction are: temperature - 500°C, contact time - 0.05 sec, dilution with water vapour 1:28 (moles), final partial pressure in the system - 110 mm Hg. The yield under these conditions is about 62% of the feed. Vinylxylene obtained consists exclusively of 2,4-dimethylstyrene. There are 3 figures and 5 tables. ✓

ASSOCIATIONS: Nauchno-issledovatel'skiy institut monomerov dlya SK
(Scientific Research Institute of Monomers for
Synthetic Rubber) Yaroslavskiy tekhnologicheskii
institut (Yaroslavl' Technological Institute)

Card 2/2

S/204/62/002/004/015/019
E075/E436

AUTHORS: Ustavshchikov, B.F., Farberov, M.I., Podgornova, V.A.

TITLE: Synthesis of methacrylic acid from isobutylene

PERIODICAL: Neftekhimiya, v.2, no.4, 1962, 592-599

TEXT: A description is given of a new method of preparation of methacrylic acid from isobutylene and N_2O_4 . Gaseous isobutylene is passed through liquid N_2O_4 giving mainly α -nitratobutyric acid. Hydrolysis of this product gives α -oxyisobutyric acid. The hydrolysis proceeds best at $100^\circ C$ and is carried out with water or dilute HNO_3 . It was found that the yield of α -oxyisobutyric acid at $10^\circ C$ increases when the ratio of isobutylene to N_2O_4 increases from 1:2 to 1:4, the maximum yield being about 80%. The yield is not affected by temperature in the range of -10 to $+20^\circ C$. It is shown that the reaction is that of nitroso-compound formation and not nitration. The intermediate reaction product, α -nitratobutyric acid, is formed from the oxime of α -nitratobutyric aldehyde. A new catalyst was developed - a mixture of calcium phosphates - on which α -oxyisobutyric acid is dehydrated to methacrylic acid. The catalyst is precipitated by adding a solution of $(NH_4)_2HPO_4$ in Card 1/2

Synthesis of methacrylic acid ...

S/204/62/002/004/015/019
E075/E436

NH₄OH to solutions of CaNO₃ and CaCl₂. It is dried at 110 to 120°C and activated and regenerated at 350 to 400°C in an air-steam mixture. The dehydration is achieved by passing 20 to 30% aqueous solution of α-oxyisobutyric acid over the catalyst at 250 to 300°C. The products contain 10 to 15% methacrylic acid. The yield increases with increasing temperature up to 250°C, which is the optimum temperature for the process. The optimum space velocity for α-oxyisobutyric acid is about 1.3 litres/litre of catalyst/hour. These conditions give 77.7% yield of methacrylic acid (based on the amount of α-oxyisobutyric acid passed). There are 4 figures. ✓

ASSOCIATIONS: Yaroslavskiy tekhnologicheskii institut
(Yaroslavl' Technological Institute)
Nauchno-issledovatel'skiy institut monomerov dlya SK
(Scientific Research Institute of Monomers for
Synthetic Rubber)

Card 2/2

S/204/62/002/004/016/019
E075/E436

AUTHORS: Tepenitsyna, Ye.P., Dorogova, N.K., Farberov, M.I.
TITLE: Study of the reaction of selective oligomerization of
divinyl into cyclododecatriene

PERIODICAL: Neftekhimiya, v.2, no.4, 1962, 604-610

TEXT: A number of Ziegler catalyst systems were investigated with a view to their application in the preparation of cyclododecatriene. The most active systems are $\text{Al}(\text{C}_2\text{H}_5)\text{Cl} - \text{TiCl}_2$; $\text{Al}(\text{C}_2\text{H}_5)_3 - \text{CrCl}_3$ and $\text{Al}(\text{iso-C}_4\text{H}_9)_3$. For the first system the best molar ratio of $\text{Al}:\text{Ti}$ was 4.5:1 and the reaction temperature 40°C . The catalyst prepared at 100°C favoured the formation of polymer and that prepared at 40°C the formation of a polymer-trimer mixture. In this reaction cis, trans, trans-cyclododecatriene was formed exclusively. The catalyst prepared by 40°C , time - 10 minutes, concentration - 0.15 mole/litre, gave 86.4% conversion of divinyl into 77.1% trimer and 22.9% polymer. The system $\text{Al}(\text{C}_2\text{H}_5)_3 - \text{CrCl}_3$ was less active. The best reaction conditions were found to be: ratio of $\text{Al}(\text{C}_2\text{H}_5)_3$ to CrCl_3 - 4:1 to 4.5:1; concentration of catalyst - 0.3 mole/litre; catalyst preparation - 20 minutes at 100°C ; reaction temperature - 60°C . Divinyl conversion under
Card 1/2

Study of the reaction of ...

S/204/62/002/004/016/019
E075/E436

these conditions was 90 to 95% and the trimer yield about 20 g/100 ml toluene per hour. For the least active catalyst - $\text{Al}(\text{iso C}_4\text{H}_9)_3$ - the optimum molar ratio of the two components was 2 to 2.5:1 and the best conditions of catalyst preparation are: temperature - 100°C , time - 5 to 10 minutes. In this case cyclododecatriene-1,5,9 is formed exclusively. The conversion of divinyl was about 20%. For all the systems the oligomerization reactions were conducted for 2 to 3 hours. It is believed that the specificity of action of the catalysts depends on the nature of the heavy metal component with variable valency. There are 5 figures and 4 tables. ✓

ASSOCIATIONS: Yaroslavskiy tekhnologicheskii institut
(Yaroslavl' Technological Institute)
Nauchno-issledovatel'skiy institut monomerov dlya SK
(Scientific Research Institute of Monomers for
Synthetic Rubber)

Card 2/2

TIKHOVINSKAYA, M.Yu.; BONDARENKO, A.V.; FARBEROV, M.I.; SOLNTSEVA, L.V.

Reaction of liquid phase catalytic oxidation of tertiary
butyltoluene. Zhur.prikl.khim. 35 no.7:1584-1591 J1 '62.
(MIRA 15:8)

1. Yaroslavskiy tekhnologicheskii institut i Nauchno-issledovatel'-
skiy institut sinteza monomerov dlya sinteticheskogo kauchuka.
(Toluene) (Oxidation)

S/080/62/035/010/008/012
D204/D307

AUTHORS: Kryukov, S.I. and Farberov, M.I.
TITLE: Some syntheses based on 2-methylpentene-1 (I)
PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 10, 1962,
2319-2324

TEXT: Propylene dimerized smoothly at 200 - 220°C, under 100 - 120 atm, with $AlEt_3$ dissolved in iso-octane as the catalyst, over a period of 1.5 hours, in nearly quantitative yields. The product, I, was dimerized at 50°C, 70% H_2SO_4 as the catalyst, in 30 min (optimum conditions), in up to ~ 80% yields w.r.t. the weight of the starting material. The dimerization of I may also be carried out with H_3PO_3 on kieselguhr as the catalyst, at 120 - 160°C, under 20 atm pressure, the highest yield of the tetramer being ~ 50%. In both cases the conversions were practically quantitative, calculated on reacted I. When 40% H_2SO_4 was used as the catalyst, I did not dimerize, but underwent a highly selective isomerization to 2-methylpentene-2 at 25 - 30°C, over a period of 2 hours. This reaction

Card 1/2

Some syntheses based on ...

S/080/62/035/010/008/012
D204/D307

also proceeded readily in the presence of H_3PO_3 on kieselguhr, at 120 - 140°C, under a pressure of 10 - 30 atm; the conversions being nearly quantitative in both cases. At 10 - 20°C, in the presence of H_2SO_4 and water, I was hydrated to 2-methylpentanol-2, over 30 min, with a nearly 100% conversion. With CH_2O , I condensed at 50°C, in the presence of H_2SO_4 , to give (in 30% yield) 3-methyl-3-n-propyldioxan-1,3, over 2 hours. I was also used to alkylate benzene, toluene and phenol, over H_2SO_4 , at 10 - 15°C in good to excellent yields. The alkylation of toluene with I, over $AlCl_3$, was less effective. There are 3 figures and 1 table.

ASSOCIATION: Yaroslavskiy tekhnologicheskii institut i nauchno-issledovatel'skiy institut monomerov dlya Sk (Yaroslav Technological Institute and Scientific Research Institute of Monomers for Synthetic Rubber)

SUBMITTED: July 13, 1961

Card 2/2

FARBEROV, M.I.; MIRONOV, G.S.; KORSHUNOV, M.A.

Syntehsis of aldehydes of the acrolein series. Zhur.prikl.khim.
35 no.11:2483-2491 N '62. (MIRA 15:12)

1. Yaroslavskiy tekhnologicheskii institut i Institut monomerov dlya
sinteticheskogo kauchuka.
(Aldehydes) (Acrolein)

S/204/63/003/001/003/013
E075/E436

AUTHORS: Fel'dblyum, V.Sh., Komissarova, G.P., Myasnikova, L.D.,
Kryukov, S.I., Farberov, M.I.

TITLE: The synthesis of isoprene from propylene. 1. Analysis
of aluminium alkyls in the process of dimerization of
propylene

PERIODICAL: Neftekhimiya, v.3, no.1, 1963, 13-19

TEXT: The aim of the work was to investigate the methods for the
analysis of activity and composition of aluminium alkyls. The
analysis consists of determining the ratio of the "active"
aluminum in AlR_3 , where R - an organic radical, to total Al.
The methods used to determine the "active" Al were: 1) the indicator
method of Razuvayev and Grayevskiy, 2) the Ziegler ammoniacal
method, 3) the Tepenitsyna-Farberova oxidation-reduction method,
4) decomposition of AlR_3 with H_2O with the subsequent measurement
of the evolved gas volume. The first two methods gave correct
values of the activity but are tedious in operation. The authors
improved the Ziegler method by using di- or trimethylamine in place
of NH_3 , which greatly decreased the analysis time. Examination of
Card 1/2.

The synthesis of isoprene ...

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E075/E436

AlR₃ used several times for the catalysis of the dimerization of propylene showed that the first portion of the higher hydrocarbons (byproducts) forming during the reaction attach themselves to Al, or displace a part of the lower alkyl groups in AlR₃. Thus AlR₃ used several times as catalyst is a complex mixture of aluminum alkyls, the molecules of which contain propyl and isobutyl groups and at least one C₉ - C₁₂ group. There are 2 figures and 2 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut monomerov dlya SK
Yaroslavskiy tekhnologicheskii institut
(Scientific Research Institute of Monomers for
Synthetic Rubber, Yaroslav Technological Institute)

SUBMITTED: June 9, 1962

Card 2/2

S/204/63/003/001/004/013
E075/E436

AUTHORS: Fel'dblyum, V.Sh., Kryukov, S.I., Farberov, M.I.,
Golovko, A.V., Tyuryayev, I.Ya., Pankov, A.G.

TITLE: The synthesis of isoprene from propylene
2. Isomerization of 2-methylpentene-1 in the liquid
phase in the presence of solid acidic catalysts

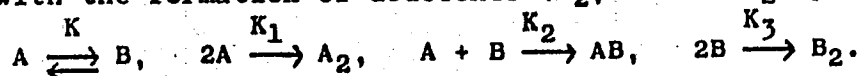
PERIODICAL: Neftekhimiya, v.3, no.1, 1963, 20-27

TEXT: The object of the work was to isomerize 91.4% wt. pure 2-methylpentene-1 in the liquid phase using silica-alumina, cation exchange resin KY-1 (KU-1), phosphoric acid-kieselguhr, alumina and silica gel as catalysts. All experiments were carried out at 100 and 150°C and at 75 to 125°C with KU-1 as catalyst. The isomerization is complicated by three secondary reactions, the main of which is the formation of dodecene (dimerization of isohexenes). A small amount of cracking gives amylenes (especially at the higher temperatures). There is also formation of small amounts of various isohexenes. Silica gel and alumina were the least active catalysts. With the remaining more active catalysts the velocity of the main and secondary reactions was much
Card 1/3

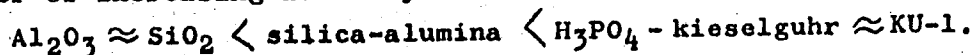
S/204/63/003/001/004/013
E075/E436

The synthesis of ...

higher, the increased temperatures favoring the formation of dodecene and decreasing the yield of 2-methylpentene-2. Isomerization of 2-methylpentene-1 (A) to 2-methylpentene-2 (B) with the formation of dodecenes (A_2 , AB and B_2) proceeds as follows



The relative values of K and K_1 , K_2 , K_3 depend on the proton acidity of the catalysts. Thus their effectiveness may be obtained from all these values. The catalysts were rated in the order of increasing activity:



The effectiveness of acidic sites increases in the order $KU-1 < H_3PO_4 - \text{kieselguhr} < \text{silica-alumina}$. Catalysts KU-1 and silica-alumina give about 80% conversion to 2-methylpentene-2 at 75 and 100°C respectively. There are 2 figures and 4 tables.

Card 2/3

The synthesis of ...

S/204/63/003/001/004/013
E075/E436

ASSOCIATION: Nauchno-issledovatel'skiy institut monomerov dlya
sinteticheskogo kauchuka Yaroslavskiy tekhnologicheskiy
institut (Scientific Research Institute of Monomers
for Synthetic Rubber, Yaroslav Technological
Institute)

SUBMITTED: June 9, 1962

Card 3/3

L 15481-63

Pr-4 RM/WW

EPR/EWP(j)/EPF(o)/EWT(m)/BDS

AFFTC/ASD

Ps-4/Pc-4/

ACCESSION NR: AP3005451

S/0204/63/003/004/0548/0557

74
73

AUTHORS: Bondarenko, A. V.; Farberov, M. I.; Tikhvinskaya, M. Yu.
Kalinina, I. A.

TITLE: Liquid phase catalytic oxidation of di-tert.butylbenzoic acid

SOURCE: Neftekhimiya, v. 3, no. 4, 1963, 548-557

TOPIC TAGS: liquid phase catalytic oxidation, butylbenzoic acid, toluene alkylation, synthetic rubber, rosin, isobutylene, aluminum chloride, cobaltous oleate

ABSTRACT: The main product of oxidation of di-tert.butyltoluene is di-tert.butylbenzoic acid. It was previously shown that the alkaline salts of this acid can completely replace the disproportionation rosin which is used as an emulsifier in the production of synthetic rubber. Di-tertiarybutylbenzoic acid has a branching structure with two tert.butyl groups which combine well with the rubber. Di-tert.-butylbenzoic acid was prepared in three stages: (a) alkylation of

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L 15481-63

ACCESSION NR: AP3005451

0

toluene with isobutylene in the presence of 90-97% H_2SO_4 at atmospheric pressure and 0 to 40C; (b) disproportionation of tert.butyltoluene into di-tert.butyltoluene in the presence of aluminum chloride at a pressure of 10 to 15 mm Hg and 80 to 110C; (c) oxidation of di-tert.butyltoluene with O_2 from the air in the presence of cobaltous oleate catalyst. Authors attempted to evaluate the conditions of liquid-phase catalytic oxidation of di-tert.butyltoluene, the character of the intermediate products and by-products, as well as the kinetics of the reaction. The effect of the above factors were studied in the presence of cobaltous oleate and other catalysts. About 80 mole % of di-tert.butylbenzoic acid and 5 mole % of di-tert.butylbenzoic aldehyde is obtained, based on the reacted di-tert.butyltoluene. Some other products of the reaction were separated and identified. The tar-like product from the reaction effects the inhibition of the reaction. A scheme for the formation of main, intermediate and side products is proposed and an explanation of the inhibiting effect is given. Orig. art. has: 1 table, 4 figures, 3 formulas, and a scheme for a possible conversion during the oxidation reaction mechanism.

ASSOCIATION: Yaroslav Engineering Institute

Card 2/32

FARBEROV, M.I.; MIRONOV, G.S.

Industrial synthesis of carbonyl monomers based on Mannich reaction. Part 3: Study of the kinetics of some industrial syntheses. Kin. i kat. 4 no.4:526-533 JI-Ag '63. (MIRA 16:11)

1. Yaroslavskiy tekhnologicheskii institut.

MIRONOVA, N.M.; VINOGRADOV, P.A.; FARBEROV, M.I.; GAVSHINOVA, K.Ye.;
ZAKHAROV, N.D.; FEDOROVA, K.F.

Synthesis of butadiene and methyl methacrylate copolymers and
the basic properties of sulfurous vulcanizates made on their
base. Kauch. i rez. 22 no.10:1-5 0 '63. (MIRA 16:11)

1. Yaroslavskiy tekhnologicheskii institut i Yaroslavskiy zavod
sinteticheskogo kauchuka.

KOSMODEM'YANSKIY, L.V.; SHUSHKINA, Ye.N.; KOPYLOV, Ye.P.; KOVRAYSKAYA, N.
L.; LAZARYANTS, E.G.; FARBEROV, M.I.

Use of a synthetic emulsifier with a base of di-tert-butylbenzoic
acid for the synthesis of all-purpose rubbers. Kauch. i rez. 22 no.
11:11-14 N '63. (MIRA 17:2)

1. Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo
kauchuka i Yaroslavskiy tekhnologicheskii institut.

ACCESSION NR: AP3001484

3/0079/63/033/005/1512/1517

AUTHOR: Mironov, G. S.; Farberov, M. I.; Orlova, I. M.

TITLE: Synthesis of carbonyl monomers by the Mannich Reaction. 4. A new method for the synthesis of divinylketones

SOURCE: Zhurnal obshchey khimii, v. 33, no. 5, 1963, 1512-1517

TOPIC TAGS: Mannich Reaction, carbonyl monomers, divinylketones, crosslinking agents, Mannich bis-base

ABSTRACT: Divinylketones are of interest as cross-linking agents for polymers. A new method of preparing these has been developed giving yields of 55-83%. The reaction of saturated ketones with formaldehyde and diethylamine hydrochloride gives a Mannich bis-base by hydrochloride which is then decomposed by heating or an alpha, beta-unsaturated ketone is similarly converted to a Mannich monobase and decomposed. The identity of the product shows that the bis-bases are substituted in the beta, beta'-positions. Orig. art. has: 2 tables.

ASSOCIATION: Yaroslavskiy tekhnologicheskiy institut (Yaroslavl' Technological Institute)

Card 1/2

ACCESSION NR: AP3001484

SUBMITTED: 07May62

DATE ACQ: 17Jun63

ENCL: 00

SUB CODE: 00

NO REF SOV: 020

OTHER: 006

Card 2/2

MIRONOV, G.S.; FARBEROV, M.I.; ORLOVA, I.M.

Synthesis of ~~α,β~~-unsaturated ketones. Zhur.prikl.khim, 36 no.3:
654-662 My '63. (MIRA 16:5)

1. Yaroslavskiy tekhnologicheskii institut.
(Ketones) (Vinyl compounds)

FARBEROV, M.I.; MIRONOV, G.S.

Technical synthesis of carbonyl monomers based on Mannich's reaction.
Dokl. AN SSSR 148 no.5:1095-1098 F '63. (MIRA 16:3)

1. Yaroslavskiy tekhnologicheskii institut. Predstavleno akademikom
M.I.Kabachnikom.

(Carbonyl compounds) (Mannich reaction)

FEL'DELYUM, V. Sh.; MYASNIKOVA, L.D.; KRYUKOV, S.I.; ~~FARBEROV~~, M.I.

Synthesis of isoprene from propylene. Neftekhimika 4 no.2:
257-261 Mr-Ap'64 (MIRA 17:8)

1. Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka, Yaroslavl' i Yaroslavskiy tekhnologicheskii institut.

AKHIEZER, I.I.; KARTYUKOV, G.I.; KRYUKOV, G.I.

Liquid-phase oxidation of hexenes. *Neftokhimiya* 4, no.4:584-590
Cl-Ag '64. (UFA 17:10)

1. Yaroslavl'skiy tekhnologicheskiy institut.

FEL'DBLYUM, V.Sh.; KRYUKOV, S.I.; FARBEROV, M.I.

Kinetics and the mechanism of acid-induced catalytic conversions
of 2-methyl-1-pentene. Kin. i kat. 5 no.3:454-459 My-Je '64.
(MIRA 17:11)

1. Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo
kauchuka i Yaroslavskiy tekhnologicheskii insti'tut.

KOSHEL', G.H.; FARBEROV, M.I.

Some syntheses based on methacrolein. Izv. vys. ucheb. zav.;
khim. i khim. tekh. 7 no.4:639-644 '64.

(MIRA 17:12)

1. Kafedra tekhnologii osnovnogo organicheskogo sinteza i
sinteticheskogo kauchuka Yaroslavskogo tekhnologicheskogo
instituta.

KRYUKOV, S.I.; KUT'IN, A.M.; KOMISSAROVA, G.P.; MYASNIKOVA, L.D.; FARBEROV,
M.I.

Dimerization of propylene by means of aluminum alkyls. Izv. vys.
ucheb. zav.; khim. i khim. tekhn. 7 no.5:821-826 '64 (MIRA 18:1)

1. Yaroslavskiy tekhnologicheskii institut. Kafedra tekhnologii
osnovnogo organicheskogo sinteza i sinteticheskogo kauchuka.

RUMYANTSEVA, Z.M.; GOLITSINA, A.A.; FARBEROV, M.A.; EPSHTEYN, V.G.;
LAZARYANTS, E.G.; YEMEL'YANOV, D.P.; KOSMODEM'YANSKIY, L.V.

Synthesis and use of butadiene-methacroleinic latexes. Kauch.
i rez. 23 no.7:7-10 J1 '64. (MIRA 17:8)

1. Nauchno-issledovatel'skiy institut monomerov dlya sinteti-
cheskogo kauchuka, Yaroslavskiy tekhnologicheskoy institut i
Yaroslavskiy shinnyy zavod.

MIRONOV, G.S.; FARBEROV, M.I.

Technical methods of synthesizing α , β -unsaturated aldehydes and ketones. Usp. khim. 33 no.5:649-661 Ja '64.

(MIRA 17:8)

1. Yaroslavskiy tekhnologicheskii institut.

MIRONOV, G.S.; FARBTROV, M.I.; BESPALOVA, I.I.

Synthesis of carbonyl monomers based on Mannich reaction.
Part 5: Synthesis of pentadienals. Zhur. ob. khim. 34
no. 5:1642-1645 My '64. (MIRA 17:7)

1. Yaroslavskiy tekhnologicheskii institut.

USTAVSHCHIKOV, B.F.; PODFORNOVA, V.A.; DORMIDONTOVA, N.V.; FARBEROV, M.I.

Course of the reaction between simplest α -olefins and
liquid nitrogen tetroxide. Dokl. AN SSSR 157 no. 1: 143-146
Jl '64 (MIRA 17:8)

1. Yaroslavskiy tekhnologicheskii institut. Predstavleno akademikom M.I. Kabachnikov.

L 41161-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM

ACCESSION NR: AP5007156

S/0286/65/000/003/0024/0024

AUTHOR: Farberov, M. I.; Bondarenko, A. V.; Komolova, G. A.

TITLE: A method for producing beta-vinylnaphthalene. } Class 12, No. 167864 12

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 3, 1965, 24

TOPIC TAGS: beta-vinylnaphthalene

ABSTRACT: This Author's Certificate introduces a method for producing β -vinyl-naphthalene. In order to increase the purity and yield of the product, oxygen or air is used for oxidizing β -ethylnaphthalene in the liquid phase. The oxidation is carried out in the presence of salts of variable valence metals, producing a mixture of methylnaphthyl ketone and methylnaphthyl carbinol. The methylnaphthyl carbinol is reduced from this mixture and dehydrated.

ASSOCIATION: none

SUBMITTED: 14Jul62

ENCL: 00

SUB CODE: GC

NO REF SOV: 000

OTHER: 000

Card 1/1

FARBEROV, M.I.; KOSHEL', G.N.

Kinetics and mechanism of the liquid-phase oxidation of metnacrolein to methacrylic acid. Kin. i kat. 6 no.4:666-673 JI-Ag '65. (MIRA 18:9)

1. Yaroslavskiy tekhnologicheskii institut.

USTAVSHCHIKOV, B.F.; FARBEROV, M.I.; TITOVA, T.S.; DEGTYAREV, Ye.V.

Nicotinic acid. Metod. poluch. khim. reak. i prepar. no.11:
82-83 '64. (MIRA 18:12)

1. Yaroslavskiy tekhnologicheskii institut. Submitted April 1964.

KOSMODEM'YANSKIY, L.V.; FARBEROV, M.I.; LAZARYANTS, E.G.; SHUSHKINA, Ye.N.;
ROMANOVA, R.G.

Effect of the colloid-chemical characteristics of soaps on
the polymerisation kinetics and properties of latex. Koll.
zhur. 27 no.6:833-838 N-D '65. (MIRA 18:12)

1. Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka, Yaroslavl' Submitted June 30, 1964.

L 15333-66 EWT(m)/EWP(j) WW/RM
 ACC NR: AP6000986 (A) SOURCE CODE: UR/0286/65/000/022/0060/0060
 AUTHORS: Mironova, N. M.; Farberov, M. I.; Vinogradov, P. A.; Zakharov, N. D.; Gavshinova, K. Ye. 36
 ORG: none B
 TITLE: A method for obtaining synthetic rubber.⁵ Class 39, No. 176410⁵ [announced by Yaroslavl Technological Institute (Yaroslavskiy tekhnologicheskij institut)]
 SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1965, 60
 TOPIC TAGS: polymer, polymerization, copolymerization, synthetic rubber, rubber
 ABSTRACT: This Author Certificate presents a method for obtaining synthetic rubber by low-temperature polymerization of dienes or copolymerization of the latter with vinyl monomers in an aqueous emulsion in the presence of redox initiators.⁵ To obtain modified rubbers, the polymerization or copolymerization process is carried out in the presence of β -chloroethyl ester of methacrylic acid.
 SUB CODE: 11/ SUBM DATE: 10Jul63
 07/
 Card 1/1 *SC* UDC: 678.762.2-134.622

FARBEROV, M.I.; USTAVSHCHIKOV, B.F.; TITOVA, T.S.

Isocinchomeric acid. Metod. poluch. khim. reak. i prepar.
no.11:58-59 '64. (MIRA 18:12)

1. Yaroslavskiy tekhnologicheskii institut. Submitted April
1964.

FARBEROV, M.I.; USTAVSHCHIKOV, B.F.; KUT'IN, A.M.; BARANOVA, T.I.

Isocinchomaronic acid. Metod. poluch. khim. reak. i prepar.
no.11:60-62 '64. (MIRA 18:12)

1. Yaroslavskiy tekhnologicheskij institut i Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka.

FARBEROV, M.I.; USTAVSHCHIKOV, B.F.; KUT'IN, A.M.; BUKHAREVA, V.A.

5-Ethyl-2-(β -hydroxyethyl)-pyridine. Metod. poluch. khim. reak.
i prepar. no. 1108-109. '64. (MIRA 18:12)

1. Yaroslavskiy tekhnologicheskii institut i Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka.

KREKUSHEVA, G.I.; BONDARENKO, A.V.; FARBBEROV, M.I.; SMIRNOVA, I.V.

Production of alkyl naphthalenes. *Neftekhimiya* 5 no.6:856-862
H-D '65. (MIRA 19:2)

1. Nauchno-issledovatel'skiy institut monomerov dlya sinteti-
cheskogo kauchuka i Yaroslavskiy tekhnologicheskiy institut.
Submitted Jan. 26, 1965.

USTAVSHCHIKOV, B.F.; PODGOMNOVA, V.A.; DORMIDONTOVA, N.V.; FARBEROV, M.I.

Synthesis of methacrylic acid based on isobutylene. Mechanism
of the reaction of isobutylene with N_2O_4 . Neftekhimiya 5 no.6:
873-879 N-D '65. (MIRA 19:2)

1. Yaroslavskiy tekhnologicheskii institut. Submitted March 13,
1965.

L 34-18-06 GMP(j) 131(c) 37
 ACC NR: AP6010546 (A) SOURCE CODE: UR/0069/65/027/005/0833/0338
 AUTHOR: Kosmodem'yanskiy, L. V.; Farberov, M. I.; Lazaryants, E. G.; Shushkina, Ye. N.; Romanova, R. G.
 ORG: Scientific Research Institute of Monomers for Synthetic Rubber, Yaroslavl' (Nauchno-issledovatel'skiy institut dlya sinteticheskogo kauchuka)
 TITLE: Effect of the colloidal-chemical characteristics of soaps on the polymerization kinetics and properties of latex
 SOURCE: Kolloidnyy zhurnal, v. 27, no. 6, 1965, 833-838
 TOPIC TAGS: particle size, polymerization kinetics, soap, emulsion polymerization
 ABSTRACT: The colloidal-chemical characteristics of potassium salts (soaps) of di-tert-butylbenzoic acid (DTBBA) and their relation to the kinetics of emulsion polymerization were studied by carrying out the emulsion copolymerization of divinyl and α -methylstyrene with these soaps and their mixtures. The soaps were found to have a low solubilizing capacity and a high value of the critical concentration of micelle formation (CCMF) as compared to soaps of disproportionated rosin and synthetic fatty acids. The rate of emulsion polymerization is determined primarily by the quantity and nature of the micellar soap present in the system. The quantity of the micellar soap in the mixture undergoing polymerization determines the character of the change
 UDC: 541.18:542.952/954
 Card 1/2

L 34418-66

ACC NR: AP6010546

in the surface tension of the latex and its magnitude. In latexes obtained from soaps with high CCMF the particle size is higher than in latexes of low CCMF. This is attributed to the fact that soaps of high CCMF have emulsifying properties in the presence of micelles, and after the latter disappear, the soaps have the properties of electrolytes, which promote the formation of larger latex particles. It is concluded that the CCMF value of soaps has a definite influence on the particle size of the latex particles, and that the fractional composition of the soaps influences the particle size distribution. Orig. art. has: 6 figures and 1 table.

SUB CODE: 07/ SUBM DATE: 30Jun64/ ORIG REF: 008/ OTH REF: 009

Card 2/2 *BLG*

ACC NR: AP6021807 (A) SOURCE CODE: UR/0413/66/000/012/0085/0086

INVENTORS: Tikhvinskaya, M. Yu.; Shishkova, L. F.; Novosel'tsev, P. V.; Farberov, M. I.; Tepenitsina, Ye. P.

ORG: none

TITLE: A method for obtaining synthetic resins. Class 39, No. 182887 [announced by All-Union Scientific Research and Construction Engineering Institute for Asbestos Technical Products, and Yaroslavl Technological Institute (Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorsko-tekhnologicheskii institut asbestovykh tekhnicheskikh izdeliy i Yaroslavskiy tekhnologicheskii institut)]

SOURCE: Izobretoniya, promyshlennyye obraztsy, tovarnyye znaki, no. 12, 1966, 85-86

TOPIC TAGS: resin, synthetic material, phenol, formaldehyde, ester

ABSTRACT: This Author Certificate presents a method for obtaining synthetic resin by condensing phenols with chlorinated common ester. The product is subsequently treated with formaldehyde or its components in the presence of a base. To impart thermal stability, mechanical strength, and elasticity to the products made of this resin, bis-(chlormethyl)-diphenyl ester is used as the ester.

SUB CODE: 11/ SUBM DATE: 06Jul64

Card 1/1

UDC: 678.682.678.632

ACC NR: AP6025586

SOURCE CODE: UR/0413/66/000/013/0019/0019

INVENTOR: Farberov, M. I.

ORG: None

TITLE: A method for producing divinyl. Class 12, No. 183199

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 19

TOPIC TAGS: butadiene, propylene, condensation reaction

ABSTRACT: This Author's Certificate introduces: 1. A method for producing divinyl by condensation of propylene with formalin in the presence of acids with subsequent separation of the reaction product by passage over a dehydrating catalyst. The propylene is condensed with formaldehyde by bubbling gaseous propylene under pressure in a column. 2. A modification of this method in which the productivity of the process is increased by condensing the propylene with formaldehyde in the presence of an inert solvent or emulsifier which is resistant to acids. 3. A modification of this method in which the water-acid layer is saturated with formaldehyde and reused after removing the product of condensation of propylene with formaldehyde.

SUB CODE: 01,11 / SUBM DATE: 14Sep46

Card 1/1

UDC; 547.315.2.07

ACC NR: AP6029019

(A)

SOURCE CODE: UR/0413/66/000/014/0021/0022

INVENTOR: Farberov, M. I.; Kishinskiy, G. I.

ORG: None

TITLE: A method for producing divinyl and other monomers . . Class 12, No. 183737

SOURCE: Izobret prom obras tov zn, no. 14, 1966, 21-22

TOPIC TAGS: butadiene, monomer, phosphate, olefin

ABSTRACT: This Author's Certificate introduces a method for producing divinyl and other monomers by condensing the appropriate olefins with formaldehyde followed by separation of the resultant product over a catalyst made up of phosphates of metals in groups I and II. Condensation is done in an excess of olefin under pressure sufficient to produce a liquid mixture with the reaction products which are continuously extracted from the system with removal of reaction heat due to removal of the heat of vaporization of the olefin. Dioxanes are broken down in the presence of a catalyst consisting of a mixture of amorphous and crystalline phosphates of metals in groups I and II.

SUB CODE: 07,11 / SUBM DATE: 26Sep49

Card 1/1

UDC; 547,315.2.07

FARBEROV, M.S. inzh.

Using electrophysical methods for machining parts.
Energomashinostroenie 9 no.7:27-28 J1 '63.

(MIRA 16:7)

(Electric metal cutting)